CLAIMS

1. Use of the protein annexin A3 as a diagnostic marker for prostate cancer.

2. Use according to claim 1, characterized in that it is a matter of specific subtypes of prostate cancer.

3. Use according to claim 1 or 2 characterized in that an upregulation of annexin A3 compared with controls is investigated.

4. Use according to one of the preceding claims, characterized in that an upregulation of annexin A3 combined with a downregulation of annexin A1, annexin A2 and/or annexin A5 is investigated.

5. Use of at least one active substance which interacts with the protein annexin A3 and in particular influences, preferably inhibits the activity and/or the abundance of the protein annexin A3, for producing a medicament for the treatment of prostate cancer, preferably specific prostate cancer patient groups.

6. Use according to claim 5, characterized in that the active substance is an agonist, antagonist, a deficient mutant, a dominant negative mutant and/or an antisense molecule.

7. Use according to claim 5 or 6, characterized in that the active substance is an antibody, preferably a therapeutic antibody.

8. Use according to one of the claims 5 to 7, characterized in that the active substance is at least one benzodiazepine derivative, particularly BDA250 and/or BDA452.

9. Use according to one of the claims 5 to 8, characterized in that the activity and/or abundance of the protein annexin A3 in exosomes is influenced.

10. Use according to one of the claims 5 to 9, characterized in that the active substance is a small molecular compound with a molecular weight (MW) <1000 for inhibiting the ion channel activity in membranes, preferably exosomes and/or matrix vesicles.

11. Use of the protein mitochondrial enoyl-coenzyme A-hydratase as a diagnostic marker for cancer.

12. Use according to claim 11, characterized in that an upregulation of mitochondrial enoyl-coenzyme A-hydratase compared with controls is

investigated.

13. Use of the protein ubiquitin-isopeptidase T and/or protein-disulphide-isomerase (PDI) as a diagnostic marker for cancer.

14. Use according to claim 13, characterized in that a downregulation of ubiquitin-isopeptidase T and/or an upregulation of protein-disulphide-isomerase (PDI) compared with controls is investigated.

15. Use of the protein serum-amyloid P-component (SAP) as a diagnostic marker for cancer.

16. Use according to claim 15, characterized in that a downregulation of serum-amyloid P-component (SAP) compared with controls is investigated.

17. Use of the protein-nuclear chloride ion channel protein as a diagnostic marker for prostate cancer.

18. Use according to claim 17, characterized in that an upregulation of the nuclear chloride ion channel protein is investigated when compared with controls.

19. Use of the protein HES1 as a diagnostic marker for cancer.

20. Use according to claim 19, characterized in that an upregulation of HES1 compared with controls is investigated.

21. Use of the proteasome alpha 2-subunit as a diagnostic marker for cancer.

22. Use according to claim 21, characterized in that an upregulation of the proteasome alpha 2-subunit compared with controls is investigated.

23. Use of the protein adenine-phosphoribosyl-transferase as a diagnostic marker for prostate cancer.

24. Use according to claim 23, characterized in that an upregulation of the adenine-phosphoribosyl-transferase compared with controls is investigated.

25. Use of the protein inorganic pyrophosphatase as a diagnostic marker for prostate cancer.

26. Use according to claim 25, characterized in that an upregulation of inorganic pyrophosphatase compared with controls is investigated.

27. Use of the proteins ubiquitin-isopeptidase T and serum-amyloid P-

component (SAP) as diagnostic markers for cancer, in which preferably a downregulation of the proteins compared with controls is investigated.

28. Use of at least two proteins selected from the group consisting of ubiquitin-isopeptidase T, heat shock protein 27 (HSP27), heat shock protein 90 (HSP90), protein-disulphide-isomerase (PDI), mitochondrial enoyl-coenzyme A-hydratase and nucleophosmine as diagnostic markers for cancer, in which there is an investigation of a downregulation of ubiquitin-isopeptidase T and/or heat shock protein 27 (HSP27) and/or an upregulation of heat shock protein 90 (HSP90), protein-disulphide-isomerase (PDI), mitochondrial enoyl-coenzyme A-hydratase and/or nucleophosmine compared with controls.

29. Use according to one of the preceding claims, characterized in that the cancer is prostate cancer.

30. Use according to one of the preceding claims, characterized in that through the investigation of one or more proteins subtypes of cancer, particularly prostate cancer are diagnosed.

31. Use according to claim 30, characterized in that at least one protein according to claim 28 in combination with at least one protein selected from the group consisting of serum-amyloid P component (SAP), fatty acid-binding protein 3 (FABP-3), galectin, microseminoprotein beta, 14-3-3 protein beta, 14-3-3 protein zeta, nuclear chloride ion channel protein, 14-3-3 protein tau, epidermal fatty acid-binding protein (E-FABP), annexin A3, transgelin, triosephosphate isomerase and aldolase A are investigated, an investigation taking place of zero or minor modifications of SAP, a downregulation of FABP-3, a strong downregulation of galectin, a strong downregulation of microseminoprotein beta, zero or minor changes of 14-3-3 protein beta, zero or minor changes of 14-3-3 protein zeta, zero or minor changes of nuclear chloride ion channel protein, zero or minor changes of 14-3-3 protein tau, zero or minor changes of E-FABP, zero or minor changes of annexin A3, an upregulation of transgelin, zero or minor changes of triosephosphate isomerase and/or zero or minor changes of aldolase A compared with controls.

32. Use according to claim 30, characterized in that at least one protein according to claim 28 in combination with at least one protein selected from the group consisting of serum-amyloid P component (SAP), fatty acid-binding protein 3 (FABP-3), galectin, microseminoprotein beta, 14-3-3 protein beta, 14-3-3 protein zeta, nuclear chloride ion channel protein, 14-3-3 protein tau, annexin A3, transgelin, triosephosphate-isomerase and aldolase A are investigated, investigation taking place of a strong upregulation of PDI, a strong upregulation of HSP90, a strong downregulation of ubiquitin-isopeptidase T, a downregulation of SAP, zero or minor changes of FABP-3, a downregulation of galectin, a downregulation of microseminoprotein beta, an

upregulation of 14-3-3 protein beta, an upregulation of 14-3-3 protein zeta, an upregulation of 14-3-3 protein tau, zero or minor changes of nuclear chloride ion channel protein, an upregulation of annexin A3, a downregulation of transgelin, an upregulation of triosephosphate isomerase and/or an upregulation of aldolase A compared with controls.

33. Use according to claim 30, characterized in that at least one protein according to claim 28 in combination with at least one protein selected from the group consisting of serum-amyloid P component (SAP), fatty acid-binding protein 3 (FABP-3), galectin, microseminoprotein beta, 14-3-3 protein beta, 14-3-3 protein zeta, nuclear chloride ion channel protein, 14-3-3 protein tau, epidermal fatty acid-binding protein (E-FABP), annexin A3, transgelin, triosephosphate-isomerase and aldolase A are investigated, an investigation taking place of a downregulation of SAP, zero or minor changes of FABP-3, zero or minor changes of galectin, zero or minor changes of microseminoprotein beta, zero or minor changes of 14-3-3 protein beta, zero or minor changes of 14-3-3 protein zeta, a strong upregulation of nuclear chloride ion channel protein, zero or minor changes of 14-3-3 protein tau, zero or minor changes of E-FABP, zero or minor changes to annexin A3, zero or minor changes of transgelin, zero or minor changes of triosephosphate-isomerase and/or zero or minor changes of aldolase A compared with controls.

34. Use according to one of the preceding claims, characterized in that at least one protein is detected with the aid o polyacrylamide gel electrophoresis, particularly two-dimensional gel electrophoresis, mass spectrometry, positron-radiation tomography (PRT), antibodies, ELISA, immunohistochemistry, protein chips and/or oligonucleotides, particularly the polymerase chain reaction (PCR).

35. Use according to one of the preceding claims, characterized in that exosomes are isolated and/or analyzed for investigating the at least one protein.

36. Diagnostic kit, comprising at least one substance for detecting the activity and/or abundance of at least one protein selected from the group consisting of ubiquitin-isopeptidase T, serum-amyloid P component (SAP), nuclear chloride ion channel protein, mitochondrial enoyl-coenzyme A-hydratase and annexin A3 for the identification of cancerous diseases, particularly prostate cancer.

37. Use of at least one active substance influencing the activity and/or abundance of the proteins ubiquitin-isopeptidase T and protein-disulphide-isomerase (PDI), for producing a medicament for the treatment of cancer, in which preferably the active substance increases the activity and/or abundance of ubiquitin-isopeptidase T and/or the active substance inhibits the activity

and/or abundance of the protein-disulphide-isomerase (PDI).

38. Use of at least one active substance influencing the activity and/or abundance of the protein mitochondrial enoyl-coenzyme A-hydratase for producing a medicament for the treatment of cancer.

39. Use according to claim 38, characterized in that the active substance inhibits the activity and/or abundance of the mitochondrial enoyl-coenzyme hydratase.

40. Use of at least one active substance influencing and in particular increasing the activity, abundance and/or localization of the protein serum-amyloid P-component (SAP) for producing a medicament for the treatment of cancer.

41. Use of at least one active substance influencing, particularly inhibiting, the activity and/or abundance of the protein nuclear chloride ion channel protein for producing a medicament for the treatment of prostate cancer.

42. Use of at least one active substance influencing, particularly inhibiting, the activity and/or abundance of protein HES1 for producing a medicament for the treatment of cancer.

43. Use of at least one active substance influencing, particularly inhibiting, the activity and/or abundance of the proteasome alpha 2-subunit for producing a medicament for the treatment of cancer.

44. Use of at least one active substance influencing, particularly inhibiting, the activity and/or abundance of the protein adenine-phosphoribosyl transferase for producing a medicament for the treatment of prostate cancer.

45. Use of at least one active substance influencing, particularly inhibiting, the activity and/or abundance of the protein inorganic pyrophosphatase for producing a medicament for the treatment of prostate cancer.

46. Use according to one of the claims 37 to 45, characterized in that the cancer is prostate cancer, preferably specific prostate cancer subtypes.

47. Use according to one of the claims 37 to 46, characterized in that the active substance is an agonist, antagonist, a deficient mutant, a dominant-negative mutant and/or an antisense molecule.

48. Use according to one of the claims 37 to 47, characterized in that the active substance is an antibody, preferably a therapeutic antibody.

49. Use according to one of the claims 37 to 48, characterized in that the active substance is a small molecular compound with a molecular weight (MW) <1000 for inhibiting ion channel activity in membranes, preferably exosomes and/or matrix vesicles.

50. Use according to one of the preceding claims, characterized in that the active substance is at least one protein selected from the group of ubiquitin-isopeptidase T, serum-amyloid P-component (SAP), fatty acid-binding protein 3 (FABP-3), annexin A3, galectin, microseminoprotein beta, heat shock protein 27 (HSP27) and transgelin.

51. Use according to one of the preceding claims, characterized in that the active substance is provided in the form of exosomes.

52. Pharmaceutical composition comprising at least one active substance according to one of the preceding claims and at least one pharmaceutically acceptable carrier.

53. Method for seeking active substances for the treatment of cancer, characterized in that at least one protein selected from the group consisting of ubiquitin-isopeptidase T, serum-amyloid P-component (SAP), nuclear chloride ion channel protein, 14-3-3 protein tau, mitochondrial enoyl-coenzyme A-hydratase, annexin A3, HES1, proteasome alpha 2-subunit, adenine-phosphoribosyl transferase and inorganic pyrophosphatase and/or at least one derivative thereof is used.